

IN THE SPECIFICATION:

Please amend the specification as follows:

Please amend the paragraph on page 11, lines 17 to 22 as follows:

A motor 106 moves the radiation guide 104 in a sweeping pattern to deliver the thermal radiation over the substrate 110. In one embodiment, the motor [105] 106 "rocks" or oscillates the thermal radiation guide 104 so that the radiation is swept back and forth over the substrate 110. The rocking motion can also be performed in two-dimensional movements. The motor is controlled by a computer 120 using a suitable high voltage I/O motor controller board.

Please amend the paragraph on page 11, lines 3 to 9 as follows:

Fig. 3 shows a second embodiment 300 of a system to uniformly deliver radiation such as heat onto the substrate [110] 310. In this embodiment, a radiation source 302 is positioned substantially perpendicularly to the substrate [110] 310 and a radiation guide 304 is positioned at an angle to the substrate to direct thermal radiation over the substrate [110] 310. In one implementation, the radiation source 302 is positioned at a 90 degree angle relative to the substrate [110] 310 and the radiation guide 304 is positioned at a 45 degree angle to the substrate [110] 310.

Please amend the paragraph on page 11, lines 10 to 18 as follows:

The radiation guide 304 has a plurality of reflecting spots [310, 312 and 314] 312. When the radiation guide 304 is rotated by a motor 311, the reflecting spots [310-314] 312 [receives] receive incident radiation beams from the radiation source 302 and redirects the radiation to the surface of the wafer [110] 310. The computer [120] 320 receives substrate temperature from pyrometers 315 and 317, and based on the temperature directs the rotation rate of the radiation guide 304 and the

intensity of the radiation source 302 as necessary to ensure a uniform substrate temperature. As the radiation guide 304 rotates, radiation from the stationary radiation source or lamp 302 is redirected and is reflected onto the substrate [110] 310.

Please amend the paragraph from page 11, line 19 to page 12, line 7 as follows:

Fig. 4 shows a third embodiment 400 of a system to uniformly deliver radiation to the substrate [110] 420. In this embodiment, a first radiation source or lamp 402 is positioned approximately above a substrate 420. The lamp 402 has a source light pattern. A plurality of first light pipes 404 receives radiation from the lamp 402 and [deliver] delivers the radiation to a plurality of dispersed spots 406 on the substrate 420. Because the light pipes delivery light in a shifted manner, the pattern rendered onto the substrate [110] 420 differs from the source light pattern. Similarly, a second radiation source or lamp 412 is positioned approximately above the substrate 420. A plurality of second light pipes 414 receives radiation from the lamp 412 and deliver the radiation to a plurality of dispersed spots 416 on the substrate 420. In another implementation, the second light pipes 414 receive radiation from the first radiation source or lamp 402 and disperses the radiation in a different pattern than the pattern of the first radiation source 402 onto the substrate [110] 420.

Please amend the paragraph from page 12, line 19 to page 13, line 8 as follows:

Figs. 6A-6F show a fifth exemplary embodiment 600 of a system to spread radiation onto a substrate [110] 510. In Fig. 6, a plurality of radiation sources are positioned above light pipes which are angled so as to shift or reposition the delivery of the radiation from the radiation sources onto a different spot on the substrate. Fig. 6A shows an exemplary light source 511 generating the beam 501. The rotation pattern of a pipe is exemplified in path 601, which represents zero degree of

rotation, upon which the beam is delivered onto spot 511A. Fig. 6B shows the pipe being rotated 60 degrees counter clockwise in path 602, resulting in the illumination of spot 511B with the non-moving light source 511. Fig. 6C shows the generation of a beam 603 when the pipe is rotated 120 degrees in path 603, resulting in the illumination of spot 511C. Again, the light source 511 remains stationary. Figs. 6D, 6E and 6F show the pipe being rotated 180 degrees, 240 degrees and 270 degrees in paths 604, 605, and [506] 606 to generate beams 504, 505 and 506 which are delivered onto spots 511D, 511E and 511F, respectively.

Please amend the paragraph from page 13, line 14 to page 14, line 2 as follows:

Fig. 7 shows a second embodiment of the apparatus of Figs. 5 and 6. In this embodiment, a radiation source is positioned above light pipes 511-516. Each of the light pipes 511-516 is angled so as to shift or reposition the delivery of the radiation from the radiation source onto pairs of spots 531-534, 532-535 and 533-536. The pipe 511 generates [the] beam 501, pipe 512 generates [the] beam 502, pipe 513 generates [the] beam 503, pipe 514 generates beam 504, pipe 515 generates the beam 505, and pipe 516 generates beam 506. Further, due to the position of the light pipes 511-516, beam 501 is delivered to spot 531, while beam 502 is delivered to spot [533] 532, beam 503 is delivered to spot [535] 533, beam 504 is delivered to spot [531] 534, beam 505 is delivered to spot [533] 535, and beam 506 is delivered to spot [535] 536. Note that in this configuration, the illuminated spots are spread and delivered to a larger range than the focused spots of Fig. 5.

Please amend the paragraph from page 15, line 16 to page 16, line 7 as follows:

After the substrate has been placed into the CVD chamber 71, it is heated by the heat source 102 and the guide 104, as discussed above. After the substrate has reached an appropriate

temperature, valve 92 is closed and valve 95 is opened allowing the carrier gases 80 and 84 and the precursor vapor to enter the vaporizer 68 through the [attached tube 96] attached tube 96. Such a valve arrangement prevents a burst of vapor into the chamber 71. The precursor 88 is already a vapor and the vaporizer is only used as a showerhead to evenly distribute the precursor vapor over the substrate 70. After a predetermined time, depending on the deposition rate of the copper and the thickness required for the initial copper deposition, valve 95 is closed and valve 92 is opened. The flow rate of the carrier gas can be accurately controlled to as little as 1 sccm per minute and the vapor pressure of the precursor can be reduced to a fraction of an atmosphere by cooling the precursor 88. Such an arrangement allows for accurately controlling the copper deposition rate to less than 10 angstroms per minute if so desired. Upon completion of the deposition of the initial copper layer, the liquid source delivery system can be activated and further deposition can proceed at a more rapid rate.